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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/755,877	01/13/2004	Ravi Kumar Arimilli	AUS920020207US1	1548
42640 7590 11/16/2007 DILLON & YUDELL LLP 8911 NORTH CAPITAL OF TEXAS HWY SUITE 2110 AUSTIN, TX 78759			EXAMINER KAWSAR, ABDULLAH AL	
			ART UNIT 2195	PAPER NUMBER
			MAIL DATE 11/16/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/755,877

Applicant(s)

ARIMILLI ET AL.

Examiner

Abdullah-Al Kawsar

Art Unit

2195

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 1/13/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. Claims 1-22 are pending.

***Specification***

2. The disclosure is objected to because of the following informalities: page 1 line 1 is missing the application number.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. The following terms lack antecedent basis:

- i. said software - claims 2, 3
- ii. the software - claim 6

- b. The following claim language is not clearly understood:

- i. Claim 1, line 2 recite "monitoring parameter sets" it is not defined what are the parameter sets for monitoring. Line 8 recite "hardware resource", it is unclear what type of hardware resources and where located. Claims 10 and 19 have similar deficiency as claim 1 above.

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- ii. Claim 2, line 2 it is unclear whether “said software” refers to “software entities” in claim 1 line 5 (i.e. it is part of the data processing system?). Claims 3, 11, 12 and 20 have similar deficiency as claim 2 above.
- iii. Claim 4, line 2 recite it is not clearly indicated where “software information” located? Claims 13 and 22 have similar deficiency as claim 4 above.
- iv. Claim 9, line 5, it is unclear what is meant by “increasing an allocation to said second schedulable software entity of a hardware resource shared” (i.e. increasing processor resource shared by other application/thread?).

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4, 6, 10-13, 15 and 19-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Ranganathan (Ranganathan) US Patent No. 6,487,578 B2.

7. As per claim 1, Ranganathan teaches the invention as claimed including a method of operating a data processing system(col 2, lines 30-36; col 3, lines 13-19), said method comprising:

establishing one or more monitoring parameter sets in a processing unit within the data processing system (col 3, lines 13-19);

the processing unit monitoring, in hardware, execution of each of a plurality of schedulable software entities(thread) within the processing unit in accordance with a monitoring parameter set among the one or more monitoring parameter sets (col 4, lines 11-14); and

the processing unit reporting to software executing in the data processing system utilization of hardware resources by each of the plurality of schedulable software entities (col 4, lines 26-33).

8. As per claim 2, Ranganathan teaches that wherein said establishing a monitoring parameter set comprises the processing unit receiving said monitoring parameter set from said software and storing said monitoring parameter set in said processing unit (col 9, lines 6-11).

9. As per claim 3, Ranganathan teaches that wherein said reporting comprises said processing unit interrupting(notifying) said software (col 5, lines 60-67).

10. As per claim 4, Ranganathan teaches that establishing a monitoring parameter set comprises receiving from software information identifying an instruction type(components represented by each of those levels) to be detected and a number of instructions to be detected of the instruction type (col 5, lines 22-36).

11. As per claim 6, Ranganathan teaches that software generating a respective classification of each of the plurality of schedulable software entities(col 5, lines 46-50) ; and

the software storing the classifications in association with identifiers of the respective schedulable software entities (col 5, lines 39-50).

12. As per claims 10-13 and 15, they are system claims of claims 1-4 and 6 above. Therefore, they are rejected under the same rational as claims 1-4 and 6 above.

13. As per claims 19-22, they are process claims of claims 1-4 above. Therefore, they are rejected under the same rational as claims 1-4 above.

***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 5, 7- 9, 14, 16 - 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ranganathan (Ranganathan) US Patent No. 6,487,578 B2, in view of Chrysos et al.(Chrysos) US Patent No. 6,549,930 B1.

16. As per claim 5, Ranganathan did not specifically teach the method that further comprises the operating system scheduling one or more schedulable software entities for execution within the processing unit in accordance with the utilization of hardware resources by each of the plurality of schedulable software entities reported by the processing unit.

17. However, Chrysos teaches that the software comprises an operating system (col 10, lines 39-43);

the method further comprises the operating system scheduling one or more schedulable software entities for execution within the processing unit in accordance with the utilization of hardware resources by each of the plurality of schedulable software entities reported by the processing unit (col 26, lines 54-58).

18. It would have been obvious to a person of ordinary skill in art at the time of invention was made to incorporate the teaching of Chrysos into the method of Ranganathan to schedule schedulable software entities for execution accordance with the resource utilization reported by the processing unit. The modification would have been obvious because one of the ordinary skills of the art would want to schedule threads with the monitoring data for maximum resource utilization, profile-directed optimization and throughput.

19. As per claim 7, Chrysos teaches that the software comprises an operating system ( col 10, lines 39-43); and

the method further comprises the operating system scheduling the one more schedulable software entities by reference to the stored classifications (col 27, lines 11-12).

20. As per claim 8, Ranganathan teaches that the software communicating to the processing unit a classification of at least one executing schedulable software entity (col 9, lines 58-67; col 10, lines 1-5); and

in response to receipt of the classification by the processing unit, the processing unit dynamically modifying an allocation of hardware resources to the schedulable software entity(col 11, lines 11-17).

21. As per claim 9, Ranganathan teaches the schedulable software entity is a first schedulable software entity(col 9, lines 43-47);

said method further includes the processing unit concurrently executing instructions within the first schedulable software entity and a second schedulable software entity(col 9, lines 29-34; col 10, lines 5-10); and

modifying an allocation of resources includes increasing an allocation to said second schedulable software entity of a hardware resource shared by said first and said second schedulable software entities (col 11, lines 10-21).

22. As per claims 14, 16 - 18, they are system claims of claims 5, 7 - 9 above. Therefore, they are rejected under the same rational as claims 5, 7 - 9 above.



***Conclusion***

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

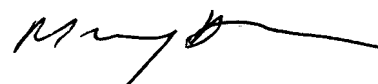
Ang(US Patent No. 6918116), Ferrell et al.(US Patent No. 5630128)

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abdullah-Al Kawsar whose telephone number is 571-270-3169. The examiner can normally be reached on 7:30am to 5:00pm, EST.

25. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng Ai T. An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

26. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Abdullah-Al Kawsar  
Patent Examiner  
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